

Appendix D. Sample of Site-Specific EWQ Targets.

The following table represents site specific existing water quality targets for Lower Delaware Special Protection Waters rules. Targets shown are not final, not yet part of the rule, and shown only as an example. The median, 95% confidence interval about the median, and 10th or 90th percentile is presented for each parameter. These are based on the 2000-2003 data set collected by the DRBC Lower Delaware Monitoring Program. Final targets will become available once the 2004 data is included in the data set.

Ambient Water Quality Assessments:

The applicable confidence interval about the median and the percentile are used for assessing “measurable changes” to ambient existing water quality. Confidence limits about the median and data percentiles that are not applied to either discharge allocations or ambient water quality assessments have been excluded from the tables (e.g., upper 95 percent confidence limit and 90th percentile for dissolved oxygen; and lower 95 percent confidence limit and 10th percentile for fecal coliform, nutrients, etc. have been excluded).

Discharge Allocations:

The median and upper or lower 95 percent confidence interval about the median are targets for discharge allocations. Percentiles are not necessary for discharge allocation targets.

Unless additional water quality target sites are used within a watershed, all portions of the confidence interval that are used for allocations at a Control Point must be incrementally reduced for future allocations. This will ensure that no change to existing water quality occurs on a watershed basis in the situation where a watershed includes multiple discharges.

Dissolved Oxygen Targets:

Dissolved oxygen concentration shall be applied to discharge allocations, and percent dissolved oxygen saturation with the appropriate water temperature shall be used to assess changes to ambient water quality.

Note on Interpretation of Tables

In **yellow highlighted cells**, the proposed target is the most stringent criterion or guideline level used among the states, DRBC, or the U.S. EPA. The adjacent number (in parentheses) is the actual measured value from DRBC’s 2000-2003 data set for the site. These represent cases where water quality must be improved to criteria levels from existing conditions.

**Sample Existing Water Quality Targets for the Delaware River at Calhoun Street Bridge,
Pennsylvania/New Jersey, River Mile 134.34 (Interstate Control Point)**

PARAMETER	MEDIAN	UPPER (U) or LOWER (L) 95% CONFIDENCE LIMIT OF MEDIAN	10 th and/or 90 th PERCENTILE	TEMPORAL REPRESENTATION
Ammonia NH ₃ -N (mg/l)	0.028	U = 0.050	90 th = 0.098	May-September
Chlorophyll A (mg/m ³)	2.70	U = 4.81	U = 7.48	May-September
Chloride (mg/l)	17.0	U = 21.0	90 th = 23.0	May-September
% Dissolved Oxygen Saturation	96.9%	L = 94.3%	10 th = 86.4%	May-September
Dissolved Oxygen (mg/l)	8.79	L = 8.40	10 th = 7.40	May-September
E. coli (colonies/100 ml)	42	U = 65	90 th = 125 (274)	May-September
Enterococcus (colonies/100 ml)	33 (44)	U = 33 (88)	90 th = 61 (352)	May-September
Fecal coliform (colonies/100 ml)	88	U = 140	90 th = 400 (720)	May-September
Nitrate NO ₃ -N (mg/l)	1.20	U = 1.32	90 th = 1.70	May-September
Orthophosphate (mg/l)	0.050	U = .070	90 th = 0.096	May-September
PH	7.80	7.60 to 8.00	7.00 to 8.50	May-September
Specific Conductance (umhos/cm)	191.5	U = 211.0	90 th = 238.9	May-September
Total Dissolved Solids (mg/l)	140	U = 160	90 th = 169	May-September
Total Kjeldahl Nitrogen (mg/l)	0.495	U = 0.640	90 th = 0.879	May-September
Total Nitrogen (mg/l)	1.675	U = 1.830	90 th = 2.348	May-September
Total Phosphorus (mg/l)	0.10 (.11)	U = 0.1 (0.12)	90 th = 0.1 (0.14)	May-September
Total Suspended Solids (mg/l)	6.0	U = 9.0	90 th = 25.9	May-September
Turbidity (NTU)	2.8	U = 4.7	90 th = 10.9	May-September
Biological Criteria (RESERVED)				August-September
Alkalinity (mg/l) DESCRIPTIVE	45.0	36.0 to 50.7	25.2 to 61.9	May-September
Discharge (cfs) DESCRIPTIVE	10,131	4,793 to 13,499	3,256 to 22,133	May-September
Hardness (mg/l) DESCRIPTIVE	70.5	60.0 to 74.0	40.1 to 79.0	May-September
Water Temperature °F	MAXIMUM	Water Temperature °F	MAXIMUM	
January 1-31	40	August 1-15	87	Ambient Targets Only. Targets equivalent to PADEP Warm Water Fisheries criteria from Chapter 93. See additional DRBC criteria for heated waste sources in water quality rules.
February 1-29	40	August 16-31	87	
March 1-31	46	September 1-15	84	
April 1-15	52	September 16-30	78	
April 16-30	58	October 1-15	72	
May 1-15	64	October 16-31	66	
May 16-31	72	November 1-15	58	
June 1-15	80	November 16-30	50	
June 16-30	84	December 1-31	42	
July 1-31	87			

Note: These values represent daytime samples taken within the range of discharge from 2,918 cfs to 38,824 cfs. Compliance monitoring at this location should be conducted between the hours of 8:00 AM and 3:00 pm, twice per month from May through September, within the range of discharge presented above.